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Examiner: Hanh Phan

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Supervisory Examiner: Jason Chan

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Date: January 27, 2006

From: Georgann S. Grunebach, Reg. No. 33,179

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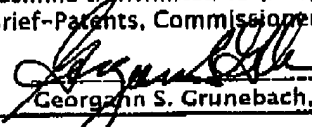
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Attention: Mail Stop Appeal Brief-Patents

Docket No. PD-970411

Please find attached Re: 09/327,351

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- > Transmittal Letter for Appeal Brief (in duplicate)
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Docket No. PD-970411
CUSTOMER NO.: 020991****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Stanislav I. Ionov, et al. : Date: January 27, 2006
Serial No.: 09/327,351 : Group Art Unit: 2633
Filed: June 5, 1999 : Examiner: Hanh Phan
For: ARCHITECTURE FOR AN OPTICAL SATELLITE
COMMUNICATION NETWORK

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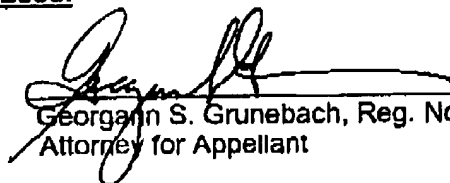

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Attorney for Appellants

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Attorney for Appellant


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Customer Number 020991**Patent**
PD-970411**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of:

Stanislav I. Ionov

Serial No. 09/327,351

Group Art Unit: 2633

Filed: 06/05/99

Examiner: Phan, Hanh

For: ARCHITECTURE FOR AN OPTICAL SATELLITE
COMMUNICATION NETWORK**BRIEF ON APPEAL**

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted in response to the Notice of Appeal filed
December 5, 2005.

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I. Real Party in Interest

The real party in interest in this matter is The DIRECTV Group, Inc. of El Segundo, California which is 34 percent owned by Fox Entertainment Group, which is approximately 82 percent owned by The News Corporation, Limited.

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-9 and 11-33 stand rejected in the Final Office Action.

IV. Status of Amendments

There have been no amendments filed subsequent to the Final Office Action mailed October 5, 2005.

V. Summary of Claimed Subject Matter

Claim 1 is directed to a satellite constellation that is best shown in Figure 1. Each of the satellites has an RF ground link for communicating with a ground station. The downlink or ground link is illustrated as 32 in Figure 2. This is also described in the second and third full paragraphs on page 10 of the present application. The satellites also have an optical link 44 for communicating with at least one of the plurality of satellites. The optical link is an optical inter-satellite link 44 described in the paragraph bridging pages 11 and 12.

The satellites have a reconfigurable optical transmitter and a reconfigurable optical receiver for sending and receiving data streams. Each reconfigurable optical transmitter has an optical carrier associated therewith. The reconfigurability is set forth in the second full paragraph of page 12. As is best illustrated in Figure 1 and described in the paragraph beginning on page 8, line 10, the satellites 12 are arranged to have a first

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subset of satellites. The first subset of satellites is configured to communicate therebetween as a first local area network 16 over a landmass. The plurality of satellites are arranged to have a second subset of satellites having at least one satellite different than that of the first subset and at least one second satellite the same as the first subset. The second subset of satellites is configured to communicate therebetween as a second local area network over the landmass. This is also generally described in the paragraph beginning on line 10 of page 8. The grouping of active satellites is described on page 9, the paragraph beginning on line 7. Also, the sentences on page 10, lines 1-7, are relevant. The first subset and second subset of satellites are generally shown in a hexagonal configuration in Figure 1. The position is about the same over the landmass but the satellites are constantly moving and changing to form the first subset and second subset.

Claim 2 recites that each of the plurality of satellites comprises a communication table. The communication table is illustrated in Figure 3 and is described beginning on page 12, line 27, through page 13, line 29.

Claim 3 depends upon Claim 2 and recites that a communication table has a plurality of routes for communicating between satellites in the first subset. This is described on page 13, lines 19-21.

Claim 4 recites that the reconfigurable optical transmitter comprises an array of laser diodes. This is set forth on page 11, lines 8 and 9.

Claim 5 recites that the optical transmitter is tuned to generate a plurality of wavelengths. This is generally illustrated in Figure 4 and is described in the paragraph beginning on page 14, line 1.

Claim 6 recites that the reconfigurable optical receiver is one from the group consisting of a Fabry-Perot filter, a wavelength division multiplexer and a fiber grating-based optical switch. This was added at page 13, lines 9-18 in response to the Office Action dated May 8, 2002.

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Claim 7 recites that the satellites are in a low earth orbit satellite. Claim 8 recites that the satellites are in medium earth orbit satellite. The types of satellites are set forth on page 8, line 19.

Claim 9 recites that the first and second subsets are aligned with a landmass. This is generally described in the paragraph bridging pages 9 and 10. Also, page 15, lines 13-21, describe the alignment of the landmass.

Claim 11 is directed to a global communication system that comprises a plurality of satellites based about the earth. The satellites are generally shown in Figure 1, reference numeral 12. Claim 11 further recites a first subset of the plurality of satellites forming a local area network over a landmass. The first subset has a first plurality of optical carriers assigned thereto for intercommunication. The first subset has a second plurality of optical carriers assigned thereto for communicating with other satellites outside of the first subset. The first subset of satellites is generally illustrated as the network 16 in Figure 1. The wavelengths are shown in Figure 4 and the paragraph on page 14, line 1, through page 15, line 12.

Claims 12 and 13 correspond directly to Claims 2 and 3 and will not be described further here.

Claim 14 recites that the satellites comprise a reconfigurable optical transmitter and a reconfigurable optical receiver. These elements are also described in Claim 1 and are not further described below.

Claim 15 corresponds directly to Claim 4 and is also not further described below.

Claim 16 corresponds to Claim 5 and is also not further described below.

Claim 17 is another independent claim that describes a method of communicating with a satellite communication system that includes the steps of deploying a plurality of satellites and grouping a first subset of the plurality of satellites into a first local area network over a first landmass. The first subset having fewer than the plurality of satellites and forming a plurality of routes between the satellites in the first local area network and assigning an optical carrier for each route. The first subset of satellites in

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the local area network is generally shown in Figure 1 as the network 16. This is described above with respect to Claim 1. The plurality of routes and assigning an optical carrier for each route is set forth in the table 48 set forth in Figure 3. The description of the routes is set forth on page 12, line 27, through page 13, line 29. Examples are provided on page 13, lines 19-29.

Claim 18 depends from Claim 17 and recites forming a second local area network over a second landmass by grouping a second subset of the plurality of satellites and interconnecting the first local area network and the second local area network to form a wide area network. An example of the network is set forth as 16 in Figure 1. The connection of a local area network to form a wide area network is set forth on page 15, lines 13-21.

Claim 19 recites assigning an optical carrier comprises the steps of obtaining the optical carrier and route from a respective optical wavelength selector and connection table. As mentioned above, a connection table is set forth in Figure 3. Selecting a wavelength is generally shown in Figure 4 and is described on page 14.

Claim 20 recites that the step of assigning comprises the step of reusing the optical carriers. Reusing optical carriers is illustrated in Figure 4 and the corresponding description is described above.

Claim 21 recites that assigning an optical carrier for each route comprises assigning a first set of optical carriers for communication within the first local area network and a second set of optical carriers for communication with other satellites outside the first local area network. This is similar to Claim 14 and will therefore not be described further.

Claim 22 is directed to a satellite constellation. The first three paragraphs of Claim 22 are nearly identical to those of Claim 1 and therefore will not be discussed. The third paragraph of Claim 22 eliminates the "as a first local area network over a landmass" wording. The fourth paragraph of Claim 22 is different in that the satellites are arranged to have a second subset of satellites over the landmass that supersede the first set of

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satellites. The second subset of satellites has at least one satellite different than that of the first subset. The second subset of satellites is configured to communicate therebetween. The superseding of the second satellite from the first satellite is described in the paragraph beginning on page 5, line 24.

Claim 23 is similar to Claim 2 and will not be described further here.

Claim 24 corresponds to Claim 3 and will also not be described further here.

Claim 25 corresponds to Claim 4 and will also not be described further here.

Claim 26 corresponds to Claim 5 and Claim 27 corresponds to Claim 6, and they will also not be described here.

Claim 28 is an independent claim directed to a global communication system. The system includes a plurality of satellites spaced about the earth. A first subset of the plurality of satellites forms a first local area network over a landmass wherein the first subset has a first plurality of optical carriers assigned thereto for intercommunication. A second subset of a plurality of satellites forms a second local area network over the landmass. The second subset has a second plurality of optical carriers assigned thereto for intercommunication. Claim 28 further recites that the first subset has a third plurality of optical carriers assigned thereto for communicating with the second subset. These subsets are illustrated as a network 16 in Figure 1. The communications therebetween are described in various places including page 15, lines 13-21, and the wavelengths are specifically described on page 14, line 1, through page 15, line 12.

Claim 29 recites that the global communication system includes a second subset that has a fourth plurality of optical carriers assigned thereto for communicating with the first subset. As mentioned above, the various wavelengths are described in various places including page 14, line 1, through page 15, line 12.

Claim 30 is another independent claim that is directed to a satellite communication system that includes the steps of deploying a plurality of satellites, grouping a first subset of the plurality of satellites into a first local area network 16 illustrated in Figure 1, and superseding the first subset by grouping a second subset of the plurality of satellites into a

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second local area network so that at least one satellite of the second subset of the plurality of satellites is different than that of the first subset of the plurality of satellites. As mentioned above in Claim 22, the superseding language is found on page 7, line 24, of the present application.

Claim 31 specifically recites that superseding comprises reconfiguring a reconfigurable optical transmitter for each of the satellites in the second subset. The reconfigurability is described in lines 9-18 of page 13.

Claim 32 recites that reconfiguring a reconfigurable optical transmitter comprises changing a plurality of routes between the satellites and the second local area network relative to the first local area network. The reassignment is described on page 12, lines 11-20.

Claim 33 depends from Claim 18 and recites that the first landmass and the second landmass are coincident. The landmass is described on page 9, lines 10-29.

VI. Grounds of Rejection to be Reviewed on Appeal

The following issues are presented in this appeal:

Whether Claims 1-9 and 11-33 are anticipated under 35 U.S.C. §102(e) by
Wainfan (6,032,041)

Whether Claims 1-6, 9, and 11-33 are anticipated under 35 U.S.C. §102(e) by
Brock (5,870,216)

Whether Claims 7 and 8 are obvious under 35 U.S.C. §103(a) over *Brock* in view
of *Grant* (5,119,225)

VII. Argument

The Rejection of Claims 1-9 and 11-33 under §102(e) by *Wainfan*

Claim 1

Claim 1 is directed to a satellite communication system that has a plurality of satellites each having a ground link for communicating with a ground station, an optical link for communication with at least one of the plurality of satellites. The *Wainfan*

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reference *does* teach a plurality of satellites, an RF ground link and an optical intersatellite link.

Claim 1 further recites that each of the satellites have a reconfigurable optical transmitter and a reconfigurable optical receiver for sending and receiving data streams, each reconfigurable optical transmitter having an optical carrier associated therewith. For these recitations the Examiner points to the intersatellite links 36, Figure 4, Col. 4, lines 28-42, Col. 5, lines 14-16, Col. 6, lines 52-60. Appellants admit that an optical intersatellite link is taught in the *Wainfan* reference. However, Appellants have reviewed the portions set forth by the Examiner. Column 4, lines 28-42, and Col. 5, lines 14-16, refer to RF beams that are spot beams directed toward the ground and not to optical beams. The passage in Col. 4 specifically refers to the fact that beams may be transponded directly back to the same beam, switched to another beam, or relayed by intersatellite link through other satellites that form a global network for the transport of real-time voice and data signals. The passage from Col. 5 refers to spot beams that are directed back to the earth. The passage from Col. 6 merely describes the intersatellite links but not the reconfigurability thereof. Appellants respectfully submit that reconfigurable optical transmitters and reconfigurable optical receivers are not taught or suggested.

Claim 1 further recites a plurality of satellites arranged to have a first subset of satellites wherein the first subset of satellites and configured to communicate therebetween as a first local area network over a landmass. Also, Claim 1 recites that the plurality of satellites are arranged to have a second subset of satellites having at least one satellite different than that of the first subset and at least one second satellite the same as the first subset. The second subset of satellites is configured to communicate therebetween as a local area network over the landmass. The Examiner cites Figs. 1-3 and Col. 5, lines 14-16 for this proposition. Appellants, however, refer the Board to Col. 4, line 41 which states that the satellite form a global network. The last two clauses of Claim 1 specifically recite a local area network over a landmass. Although there are

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several satellites illustrated in the *Wainfan* reference, they do not form a local area network over a landmass. Instead, the satellites set forth in the *Wainfan* reference form a network that is global without forming a local area network over a landmass. Appellants can find no specific teaching for a local landmass in the *Wainfan* reference. Also, a second subset is also not illustrated in the *Wainfan* reference. As mentioned, the *Wainfan* reference provides a global network and not a local area network.

Claim 2

Claim 2 specifically recites a communications table. While a routing table 38 is taught in the *Wainfan* reference, no teaching or suggestion is found for the elements missing from the *Wainfan* reference. Therefore, Claim 2 is believed to be allowable.

Claim 3

Claim 3 depends from Claim 2 and recites that a communication table has a plurality of routes for communicating between satellites in the first subset. As mentioned above, the *Wainfan* reference does not teach a first subset and therefore does not have a communication table that has a plurality of routes for communicating between satellites in the first subset.

Claim 4

Claim 4 recites that the reconfigurable optical transmitter comprises an array of diodes. Appellants believe Claim 4 stands or falls together with Claim 1.

Claim 5

Claim 5 recites that the optical transmitter is tunable to generate a plurality of wavelengths. Appellants can find no teaching or suggestion in the *Wainfan* reference that the optical transmitter is tunable. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 5.

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Claim 6

Claim 6 recites that the optical receiver is one from a Fabry-Perot filter, wavelength division multiplexer, and a fiber grating-based optical switch. The specific elements of Claim 6 have not been addressed by the Examiner and therefore Appellants believe that this claim is allowable.

Claim 7

Claim 7 recites that the satellite is in a low earth orbit. Although a medium earth orbit satellite is described in Col. 3, line 57, the medium earth orbit satellite distinguishes itself from a low earth orbit satellite which is not included in the *Wainfan* system. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 7.

Claim 8

Claim 8 stands or falls together with Claim 1.

Claim 9

Claim 9 recites that the first and second subsets are aligned with a landmass. As mentioned above, Appellants respectfully believe that no first or second subsets are set forth in the *Wainfan* reference. Therefore, no subsets are available to align with the landmass. Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 9.

Claim 11

Claim 11 is directed to a global communication system having a plurality of satellites spaced about the earth, a first subset of the plurality forming a local area network over the landmass. The first subset has a first plurality of optical carriers assigned thereto for intercommunication. The first subset has a second plurality of optical carriers assigned thereto for communicating with other satellites outside of the

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first subset. As mentioned above, Appellants respectfully submit that there is no local area network set forth in the *Wainfan* reference. Because there is no local area network, the teaching of optical carriers for inner communication and optical carriers for communicating with other satellites outside of the first subset is also not set forth. Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 11.

Claim 12

Claim 12 recites that the satellites comprise a communications table. Claim 12 stands or falls together with Claim 11.

Claim 13

Claim 13 is similar to Claim 3 and is believed to allowable for the same reasons set forth above. That is, because no first subset of satellites is taught, the communications table does not have a plurality of paths for communicating between the satellites and the first subset. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 13.

Claim 14

Claim 14 recites that the satellites comprise a reconfigurable optical transmitter and a reconfigurable optical receiver. The Examiner generally points to Figure 1 for a reconfigurable optical transmitter and a reconfigurable optical receiver. Appellants have reviewed Claim 14 and can find no teaching or suggestion for a reconfigurable optical receiver. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 14.

Claim 15

Claim 15 depends from Claim 14 and recites that the optical transmitter comprises an array of laser diodes. The *Wainfan* reference never teaches that a laser diode may be

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used as a reconfigurable optical transmitter. In fact, the *Wainfan* reference never utilizes a laser diode. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 15.

Claim 16

Claim 16 recites that the reconfigurable optical transmitter is tunable to generate a plurality of wavelengths. The Examiner merely points to the laser diodes and does not recite that the optical transmitter is tunable. In fact, the word tune or tunable is never used in the *Wainfan* reference.

Claim 17

Independent Claim 17 is directed to a method of communicating with a satellite communication system that includes grouping satellites into a first local area network over a first landmass having a first subset fewer than the plurality of satellites. A plurality of routes are formed between the satellites in the first local area network and optical carriers are assigned for each route. As described above, no teaching or suggestion is provided for a local area network in the *Wainfan* reference. Appellants therefore respectfully request the Examiner to reconsider the rejection of Claim 17.

Claim 18

Claim 18 recites the second local area network over a second landmass. As mentioned above with respect to Claim 1, Appellants believe no second subset, or first subset for that matter, is taught or suggested. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 18.

Claim 19

Claim 19 recites obtaining the optical carrier and route from a respective optical wavelength selector and connection table. Although a routing table is described which sets forth the routes, no teaching or suggestion is provided for a wavelength selector in

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the *Wainfan* reference. Appellants therefore respectfully request the Board to reconsider the rejection of Claim 19.

Claim 20

Claim 20 recites reusing the optical carriers. There is no teaching in the *Wainfan* reference for anything but a single wavelength. Therefore, Claim 20 stands or falls for the same reasons set forth above with respect to Claim 17.

Claim 21

Claim 21 recites assigning a first set of optical carriers for communication within the first local area network and the second set of optical carriers for communication within other satellites outside the first local area network. As mentioned above with respect to Claims 17 and 1, no teaching is provided for providing different local area networks in the *Wainfan* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 21.

Claim 22

Claim 22 is directed to a satellite constellation that includes a plurality of satellites wherein each of the satellites has a reconfigurable optical transmitter and a reconfigurable optical receiver. As mentioned above with respect to Claim 1, no teaching or suggestion is provided for a reconfigurable optical transmitter or reconfigurable optical receiver. Also, no subsets of the satellites are set forth in the *Wainfan* reference as described above with respect to Claim 1. Appellants therefore respectfully request the Examiner to reconsider the rejection of Claim 22.

Claims 23-27

Claims 23-27 correspond directly to Claims 2-6. Appellants therefore believe that these claims are allowable for the same reasons set forth above with respect to those claims.

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Claim 28

Claim 28 is directed to a global communication system that includes a plurality of satellites spaced about the earth, a first subset of satellites forming a first local area network and a second subset of said plurality of satellites forming a second local area network having a second plurality of optical carriers assigned thereto, the first subset having a third plurality of optical carriers assigned thereto for communicating with the second subset. As mentioned above, no teaching or suggestion is provided for a subset or a local area network in the *Wainfan* reference. Appellants therefore respectfully request the Board to reverse the rejection of Claim 28.

Claim 29

Claim 29 recites the second subset has a fourth plurality of optical carriers assigned thereto for communicating with the first subset. Appellants respectfully submit that there are no subsets and therefore no optical carriers are assigned for specific subsets in the *Wainfan* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 29 as well.

Claim 30

Claim 30 is directed to a method of communicating within a satellite communication system including deploying a plurality of satellites, grouping a first set of satellites of the plurality of satellites into a first local area network and superceding the first subset by grouping a second subset of the plurality of satellites into a second local area network so that at least one satellite of the second subset of plurality of satellites is different than that of the first subset of satellites. This claim is also believed to be allowable since forming subsets and local area networks is not taught or suggested in the *Wainfan* reference.

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Claim 31

Claim 31 recites reconfiguring a reconfigurable optical transmitter for each of the satellites in the second subset. As mentioned above, no teaching or suggestion is provided in the *Wainfan* reference for subsets of satellites. Therefore, reconfiguring for satellites in a second subset is also not taught. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 31.

Claim 32

Claim 32 recites changing a plurality of routes between the satellites and the second local area network relative to the first local area network. As mentioned above, no local area networks are taught in the *Wainfan* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to this claim as well.

Claim 33

Claim 33 recites that the first and second landmasses are coincident with respect to Claim 18. Appellants believe that Claim 33 stands or falls together with Claim 18.

The Rejection of Claims 1-6, 9, and 11-33 under §102(e) by *Brock***Claim 1**

The Examiner points to the *Brock* reference for having a reconfigurable optical transmitter and optical receiver. The Examiner points to reference numeral 44 of Figure 1 for the optical transmitter and reference numeral 22 of Figure 1 for the optical receiver. Appellants have reviewed Figure 1 and the corresponding description and can find no teaching or suggestion for a reconfigurable optical transmitter and receiver. In fact, a word search of the reference reveals that the word reconfigurable is never used in the document.

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Appellants acknowledge that the *Brock* reference illustrates a number of satellites in Figure 1. The satellites, however, do not form separate groupings so they do not form a first local area network over a landmass and a second local area network over a landmass. The Examiner points to satellites 12 and 26 that are configured to communicate therebetween with the ground stations 16 and 24. The Examiner points to satellites 18 and 12 for forming a second local area network. However, no teaching or suggestion is provided for a grouping into a network. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 1.

Claim 2

Claim 2 recites that the satellite comprises a communication table. The Examiner points to Col. 4, lines 38-64, but can find no teaching of a communications table.

Claim 3

Claim 3 specifically recites the communication table has a plurality of routes for communicating between satellites in the first subset. As mentioned above, no subset is taught or suggested in the *Brock* reference and Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 3.

Claim 4

Claim 4 specifically recites that the optical transmitter comprises an array of laser diodes. Although PIN diodes are set forth for the optical receiver, no teaching or suggestion is provided in the *Brock* reference for laser diodes being used as a transmitter. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to this claim as well.

Claim 5

Claim 5 specifically recites that the optical transmitter is tunable to generate a plurality of wavelengths. Claim 5 stands or falls together with Claim 1.

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Claim 6

Claim 6 recites that the reconfigurable optical receiver is a Fabry-Perot filter, a wavelength division multiplexer, or a fiber grating-based optical switch. Claim 6 stands or falls for the same reasons set forth with respect to Claim 1.

Claim 9

Claim 9 recites that the first and second subsets are aligned with a landmass. As mentioned above, no teaching or suggestion is provided for a first or second subset and therefore Claim 9 is also believed to be allowable for the same reasons set forth above.

Claim 11

Claim 11 is similar to Claim 1 in that a subset of satellites forming a local area network is set forth. As mentioned above with respect to Claim 1, no plurality of subsets is provided in the *Brock* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 11.

Claims 12 and 13

Claims 12 and 13 correspond directly to Claims 2 and 3. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claims 12 and 13 for the same reasons set forth above.

Claim 14

Claim 14 specifically recites that each of the satellites comprises a reconfigurable optical transmitter and a reconfigurable optical receiver. No teaching or suggestion is provided for a reconfigurable optical transmitter or a reconfigurable optical receiver. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 14.

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Claim 15

Claim 15 specifically recites that the optical transmitter comprises an array of diodes. As mentioned above, no teaching or suggestion is provided in the *Brock* reference for diodes using an optical transmitter. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 15.

Claim 16

Claim 16 specifically recites that the optical transmitter is tunable to generate a plurality of wavelengths. Appellants respectfully submit that no teaching or suggestion is provided in the *Brock* reference for optical transmitters tunable to generate a plurality of wavelengths. The tunable lasers are merely for the optical switch as set forth in Figure 7. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 16.

Claim 17

Claim 17 recites grouping a first subset of the plurality of satellites into a first local area network over a first landmass and a first subset having fewer than the plurality of satellites. Appellants respectfully submit that no subsets are taught or suggested in the *Brock* reference and therefore no local area network having fewer than the first plurality of satellites is set forth. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 17.

Claim 18

Claim 18 recites the second local area network. Appellants respectfully submit that no subsets are illustrated and no subset forming a second local area network is also set forth. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 18.

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Claim 19

Claim 19 specifically recites the step of obtaining the optical carrier and route from a respective optical wavelength selector and connection table. Appellants can find no teaching or suggestion for an optical selector or a wavelength selector. The Examiner merely points to Figures 1-3 in general and has not specifically taught these elements. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 19.

Claim 20

Claim 20 recites the step of reusing the optical carriers. The Examiner again points generally to Figures 1-3 and has not specifically pointed to a teaching in the *Brock* reference for this proposition.

Claim 21

Claim 21 recites using a first set of optical carriers for communication within a first local area network and a second set of optical carriers for communicating with other satellites outside the first local area network. Appellants respectfully submit that no teaching or suggestion is provided for forming local area networks and therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 21.

Claim 22

Claim 22 is similar to Claim 1 but recites that the plurality of satellites are arranged to have a second subset of satellites over the landmass that supersede the first set of satellites. The second subset of satellites has at least one satellite different than that of the first subset. The second subset of satellites is configured to communicate therebetween. As mentioned above with respect to Claim 1, no subsets are formed in the *Brock* reference. Appellants therefore respectfully request the Board to reverse the

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Examiner's position with respect to Claim 22 for similar reasons with respect to those of Claim 1.

Claims 23-27

Claims 23-27 correspond directly to Claims 2-6 and are believed to be allowable for the same reasons set forth above.

Claim 28

Claim 28 specifically recites a first subset and a second subset of the plurality of satellites. As mentioned above with respect to the other claims, these are not set forth in the *Brock* reference.

Claim 29

Claim 29 specifically recites that the second subset has a fourth plurality of optical carriers assigned for communicating with the first subset. Appellants respectfully submit that this is not set forth in the *Brock* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to this claim as well.

Claim 30

Claim 30 is a method claim that includes grouping a first subset of the plurality of satellites into a first local area network and superseding the first subset by grouping a second subset of the plurality of satellites into a second local area network so that at least one satellite of the second subset of the first plurality of satellites is different than that of the first subset of the plurality of satellites. As mentioned above, no subsets are set forth in the *Brock* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to this claim as well.

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Claim 31

Claim 31 recites reconfiguring a reconfigurable optical transmitter for each of the satellites in the second subset. As mentioned above, no reconfigurable optical transmitter is set forth in the *Brock* reference.

Claim 32

Claim 32 recites changing a plurality of routes between the satellites in the second local area network relative to the first local area network. As mentioned above, no first local area network or second local area network is set forth and therefore Claim 32 is believed to be allowable for the same reasons set forth above.

Claim 33

Claim 33 recites that the first landmass and the second landmass are coincident. Claim 33 is believed to be allowable for the same reasons set forth above with respect to Claim 18.

The Rejection of Claims 7, 8 and 10 under §103(a) over *Brock* in view of *Grant***Claims 7, 8 and 10**

Claims 7, 8 and 10 are dependent upon Claim 1. Claim 7 recites that the satellites are in low earth orbit, Claim 8 recites the satellites are in medium earth orbit, and Claim 10 recites that the subset comprises seven satellites using three optical carriers. The *Grant* reference does teach LEO satellites, however, it appears that medium earth orbit satellites are not taught or suggested. With respect to Claim 10, the Examiner points to Fig. 1 of *Grant* for seven satellites using three optical carriers. Claim 1 illustrates one GEO satellite and three LEO satellites. Appellants can find no teaching or suggestion for three optical carriers and seven satellites in a subset. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claims 7, 8 and 10 as well.

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VIII. Claims Appendix

A copy of each of the claims involved in this appeal, namely Claims 1-9 and 11-33 are attached as a Claims Appendix.

IX. Evidence Appendix

None.

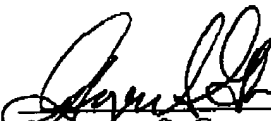
X. Related Proceedings Appendix

None.

XI. Conclusion

For the foregoing reasons, Appellants respectfully request that the Board direct the Examiner in charge of this examination to withdraw the rejections. Please charge any fees required in the filing of this appeal to deposit account 50-0383.

Respectfully submitted,


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CLAIMS APPENDIX

1. A satellite constellation comprising:

a plurality of satellites, each of said satellites having an RF ground link for communicating with a ground station and an optical link for communication with at least one of the plurality of satellites;

each of said satellites having a reconfigurable optical transmitter and a reconfigurable optical receiver for sending and receiving data streams, each reconfigurable optical transmitter having an optical carrier associated therewith;

said plurality of satellites arranged to have a first subset of satellites, said first subset of satellites are configured to communicate therebetween as a first local area network over a landmass;

said plurality of satellites arranged to have a second subset of satellites having at least one satellite different than that of said first subset and at least one second satellite the same as the first subset, said second subset of satellites are configured to communicate therebetween as a second local area network over the landmass.

2. A satellite constellation as recited in claim 1 wherein each of said plurality of satellites comprises a communications table.

3. A satellite constellation as recited in claim 2 wherein said communications table has a plurality of routes for communicating between satellites in said first subset.

4. A satellite constellation as recited in claim 1 wherein said reconfigurable optical transmitter comprises an array of laser diodes.

5. A satellite constellation as recited in claim 1 wherein said optical transmitter is tunable to generate a plurality of wavelengths.

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6. A satellite constellation as recited in claim 1 wherein said reconfigurable optical receiver is one from a group consisting of a Fabry-Perot filter, a wavelength division multiplexer, and a fiber grating-based optical switch.

7. A satellite constellation as recited in claim 1 wherein said satellites are in low earth orbit.

8. A satellite constellation as recited in claim 1 wherein said satellites are in medium earth orbit.

9. A satellite constellation as recited in claim 1 wherein said first and second subsets are aligned with a landmass.

11. A global communications system comprising:
a plurality of satellites spaced about the earth;
a first subset of said plurality of satellites forming a local area network over a landmass, said first subset having a first plurality of optical carriers assigned thereto for intercommunication;
said first subset having a second plurality of optical carriers assigned thereto for communicating with other satellites outside of said first subset.

12. A global communications system as recited in claim 11 wherein each of said plurality of satellites comprises a communications table.

13. A global communications system as recited in claim 12 wherein said communications table has a plurality of paths for communication between said satellites of said first subset.

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14. A global communications system as recited in claim 11 wherein each of said satellites comprises a reconfigurable optical transmitter and a reconfigurable optical receiver.

15. A global communications system as recited in claim 14 wherein said reconfigurable optical transmitter comprises an array of laser diodes.

16. A global communications system as recited in claim 14 wherein said reconfigurable optical transmitter is tunable to generate a plurality of wavelengths.

17. A method of communicating within a satellite communications system comprising the steps of:

- deploying a plurality of satellites;
- grouping a first subset of the plurality of satellites into a first local area network over a first landmass, said first subset having fewer than the plurality of satellites;
- forming a plurality of routes between the satellites in the first local area network;
- and
- assigning an optical carrier for each route.

18. A method as recited in claim 17 further comprising the steps of forming a second local area network over a second landmass by grouping a second subset of the plurality of satellites and interconnecting the first local area network and the second local area network to form a wide area network.

19. A method as recited in claim 17 wherein the step of assigning an optical carrier comprises the step of obtaining the optical carrier and route from a respective optical wavelength selector and connection table.

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20. A method as recited in claim 17 wherein the step of assigning comprises the step of reusing the optical carriers.

21. A method as recited in claim 17 wherein assigning an optical carrier for each route comprises assigning a first set of optical carriers for communication within the first local area network and a second set of optical carriers for communication with other satellites outside of said first local area network.

22. A satellite constellation comprising:

a plurality of satellites, each of said satellites having an RF ground link for communicating with a ground station and an optical link for communication with at least one of the plurality of satellites;

each of said satellites having a reconfigurable optical transmitter and a reconfigurable optical receiver for sending and receiving data streams, each reconfigurable optical transmitter having an optical carrier associated therewith;

said plurality of satellites arranged to have a first subset of satellites over a landmass, said first subset of satellites are configured to communicate therebetween;

said plurality of satellites arranged to have a second subset of satellites over the landmass that supercede the first set of satellites, said second subset of satellites having at least one satellite different than that of said first subset, said second subset of satellites are configured to communicate therebetween.

23. A satellite constellation as recited in claim 22 wherein each of said plurality of satellites comprises a communications table.

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24. A satellite constellation as recited in claim 23 wherein said communications table has a plurality of routes for communicating between satellites in said first subset.

25. A satellite constellation as recited in claim 22 wherein said reconfigurable optical transmitter comprises an array of laser diodes.

26. A satellite constellation as recited in claim 22 wherein said optical transmitter is tunable to generate a plurality of wavelengths.

27. A satellite constellation as recited in claim 22 wherein said reconfigurable optical receiver is one from a group consisting of a Fabry-Perot filter, a wavelength division multiplexer, and a fiber grating-based optical switch.

28. A global communications system comprising:

a plurality of satellites spaced about the earth;

a first subset of said plurality of satellites forming a first local area network over a landmass, said first subset having a first plurality of optical carriers assigned thereto for intercommunication;

a second subset of said plurality of satellites forming a second local area network over the landmass, said second subset having a second plurality of optical carriers assigned thereto for intercommunication;

said first subset having a third plurality of optical carriers assigned thereto for communicating with said second subset.

29. A global communications system as recited in claim 28 wherein said second subset has a fourth plurality of optical carriers assigned thereto for communicating with said first subset.

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30. A method of communicating within a satellite communications system comprising the steps of:

deploying a plurality of satellites;

grouping a first subset of the plurality of satellites into a first local area network;

superceding said first subset by grouping a second subset of the plurality of satellites into a second local area network so that at least one satellite of said second subset of the plurality of satellites is different than that of said first subset of the plurality of satellites.

31. A method as recited in claim 30 wherein superceding said first subset comprises reconfiguring a reconfigurable optical transmitter for each of the satellites in the second subset.

32. A method as recited in claim 31 wherein reconfiguring a reconfigurable optical transmitter comprises changing a plurality of routes between the satellites in the second local area network relative to the first local area network.

33. A method as recited in claim 18 wherein the first landmass and second landmass are coincident.